89. (New) A method of forming a barrier metal formed of nitride containing refractory metal with a chemical vapor deposition (CVD), the barrier metal being interposed between a first metal layer and a second metal layer which are electrically connected to each other, the first and second metal layers and an insulating layer being formed on a substrate, the barrier metal preventing diffusion of metal or oxygen between the first and second metal layers or between the first metal layer and the insulating layer, the method comprising:

carrying the substrate on which the first metal layer and one of the second metal layer and the insulating layer are formed, into a processing apparatus;

heating the substrate and vacuumizing an inside of the processing apparatus into which the substrate is carried;

forming a film containing refractory metal on the first metal layer and one of the second metal layer and the insulating layer on the substrate by supplying reduction gas and gas containing the refractory metal into the processing apparatus; and

nitriding the film containing the refractory metal by supplying gas containing nitrogen into the processing apparatus after forming the film containing the refractory metal, thereby forming nitride.

90. (New) The method according to Claim 89, wherein the steps of forming the film containing the refractory metal, and nitriding of the film, are performed in the processing apparatus.

91. (New) The method according to Claim 89, wherein the steps of nitriding the film containing the refractory metal is performed after the step of supplying the reduction gas and the gas containing the refractory metal is discontinued.

92. (New) The method according to Claim 89, wherein between the step of forming the film containing the refractory metal, and the step of nitriding the film, a residue in the processing apparatus is purged therefrom by supplying inert gas into the processing apparatus.

93. (New) The method according to Claim 89, wherein the step of nitriding the film containing the refractory metal is performed by generating plasma with the gas containing nitrogen.

94. (New) The method according to Claim 93, wherein the plasma is generated between an upper electrode and an opposing lower electrode provided opposite to each other in the processing apparatus by applying a high-frequency power between the upper electrode and the lower electrode.

95. (New) The method according to Claim 94, wherein the upper electrode is a shower head configured to supply gas, and the lower electrode is a table on which the substrate is placed.

96. (New) The method according to Claim 89, wherein the gas containing nitrogen contains at least one of the group consisting of NH_3, MMH and N_2.

97. (New) The method according to Claim 89, wherein the gas containing the refractory metal is WF_6.

98. (New) The method according to Claim 89, wherein the reduction gas contains at least one of H_2 gas and silane-based gas.

99. (New) The method according to Claim 98, wherein the silane-based gas consists of at least one of the group consisting of SiH_4, Si_2H_6 and SiH_2Cl_2.

100. (New) The method according to Claim 89, wherein the film containing the refractory metal is formed between about 300 to 450°C.

101. (New) The method according to Claim 89, wherein the film containing the refractory metal is one of a WSi film and a W film.

102. (New) The method according to Claim 96, wherein the nitriding step is performed by using MMH under the following process conditions:

an amount of MMH gas: about 1-20 sccm,

temperature: about 300-450°C,

pressure: about 1-10 Torr.

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103. (New) The method according to Claim 93, wherein the nitriding step is performed by using the plasma under the following process conditions:

an amount of N_2 gas: about 5-300 sccm,

temperature: about 300-450°C,

pressure: about 0.1-5 Torr.

104. (New) The method according to Claim 89, wherein the nitride formed by nitriding the film containing the refractory metal is one of WN_x and $WSiN_y$.

105. (New) The method according to Claim 89, wherein forming the film containing the refractory metal is performed with a thermal chemical vapor deposition (CVD).

106. (New) The method according to Claim 89, wherein a surface of the film containing the refractory metal is nitrided.

107. (New) A method of forming a barrier metal formed of nitride containing tungsten with a thermal chemical vapor deposition (CVD), the barrier metal being interposed between a first metal layer and a second metal layer which are electrically connected to each other or between the first metal layer and an insulating layer, the first and second metal layers and the insulating layer being formed on a substrate, the barrier metal preventing diffusion of

metal or oxygen between the first and second metal layers or between the first metal layer and the insulating layer, the method comprising:

carrying the substrate on which the first metal layer and one of the second metal layer and the insulating layer are formed, into a processing apparatus;

heating the substrate and vacuumizing an inside of the processing apparatus into which the substrate is carried; and

forming a nitride containing tungsten on the first layer and one of the second layer and the insulating layer on the substrate by supplying reduction gas, gas containing tungsten and gas containing nitrogen into the processing apparatus.

108. (New) The method according to Claim 107, wherein nitride containing tungsten is formed to have a film with a thickness of about 0.005 to 0.05 μm.

109. (New) The method according to Claim 107, wherein the gas containing nitrogen is MMH.

110. (New) The method according to Claim 107, wherein gas containing tungsten is WF_6, the reduction gas is H_2, gas containing nitrogen is one of NH_3 and MMH, and nitride containing tungsten is Wn_x.

111. (New) The method according to Claim 107, wherein gas containing tungsten is WF_6, the reduction gas is one of SiH_4, Si_2H_6 and SiH_2Cl_2, the gas containing nitrogen is one of NH_3 and MMH, and nitride containing tungsten is WSi_xN_y.

IN THE ABSTRACT

Please replace the Abstract at page 37 with the following: